MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2019/2020

BSE2414 – SOFTWARE ENGINEERING FUNDAMENTALS

(All sections / Groups)

3 MARCH 2020
9.00 –11.00
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of **3 pages** with 4 questions only.
2. Attempt **ALL** questions. Distribution of the marks for each question is given.
3. Please print all your answers in the Answer Booklet provided.

ESSAY QUESTIONS (100 Marks)

There are FOUR (4) questions in this paper. Answer ALL questions.

Question 1

a. Present the FOUR (4) fundamental activities in software processes.

(10 marks)

b. Apply the most appropriate generic software process model that might be used as a basis for managing the development of the following systems (5 marks each):

i. A university accounting system that replaces an existing system

ii. An interactive travel planning system that helps users plan journeys with the lowest environmental impact

iii. A training application system to support employees' application process and training record.

Hint: Choose one software development model and justify why this model is best for the system.

(15 marks)

(Total: 25 marks)

Question 2

a. Illustrate any TWO (2) UML diagram types for an ATM transaction. (5 marks)

b. A software organization is required to develop an online shopping system for a popular boutique store. Registered customer and system administrator will use this system once it is fully deployed. Illustrate a use case diagram as per the description of the software system as details below:

- 7 Actors: Web Customer, New Customer, Registered Customer, Authentication, Identity Provider, Credit Payment Service, Paypal
- 4 Top level use cases: View Items, Make Purchase, Checkout and Client register.
- Web customer uses web site to make purchases online and must register and become registered customer. They can View Items, Make Purchase and Client register.
- View items and Checkout could be used as a part of Make Purchase.

Continue...

- Client Register allows New Customer to register on the web site, for example to get some coupons or be invited to private sales.
- Customer Authentication is included in View Items, Checkout, and Client Register. This is done by administrator.
- Checkout includes several required Authentication, Identity Provider, Credit Payment Services and Paypal.
- Checkout also includes Payment which could be done either by using credit card and external credit payment service or with PayPal.

(20 marks)

(Total: 25 marks)

Question 3

You are recently hired by Starbucks as a project manager. You are tasked to plan, design and implement a complete system for an apps that will incorporate newest technology such as artificial intelligence to increase customer loyalty. The timeframe given is 12 months with a budget of RM1 million.

a. Using the 5-stage project management process, prepare activities for each stage. (15 marks)

b. Illustrate a Gantt chart for the project. (10 marks)

(Total: 25 marks)

Question 4

a. Prepare an object-oriented system model to illustrate the classes and associations for a hospital system. The system involves seven classes as follows:
   - Condition
   - Patient
   - General Practitioner
   - Consultant
   - Medication
   - Treatment
   - Hospital Doctor

(15 marks)

b. Prepare a test case template for an online new student registration form. (10 marks)

(Total: 25 marks)

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